GARDEN AND FOREST.

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Nature and American Literature.

EARLY in the year Messrs. Harper & Brothers published a book, by George William Curtis, entitled *Literary and Social Essays*. These essays, gathered by Mr. Curtis's literary executors from the various books and periodicals in which they were first published, extend over a period of nearly forty years. The sketches relate chiefly to the group of great Americans who were life-long friends of the distinguished author. Though Mr. Curtis was with us only yesterday, his recollections run back for half a century, and, therefore, in these reminiscences, we are brought face to face with the noble men who have given to American literature its chief distinction. And as under Mr. Curtis's sympathetic presentment Irving, Bryant, Thoreau, Emerson, Holmes and Longfellow pass in review before us, each in his habit as he lived, we cannot but feel that never did any group of men more thoroughly exhibit the true sanity of genius. The most pessimistic critic can find no trace of aberration in any of them, except in the unbroken spiritual solitariness of Hawthorne, or in the rigid adherence to a noble but somewhat impracticable ideal which set Thoreau forever apart from his fellow-men. Strong in moral purpose, self-reverent, self-controlled, these men have the rare distinction of having ennobled literature as much by their lives as by their works, and Mr. Curtis is of their kin. He had the same strong moral convictions, the same deep patriotism, and though he lacked the creative faculty, his critical gift was of a high order, and his literary style, even in his lighter work, has that unmistakable accent of high breeding which must be forever the despair of the mere dilettante in literature.

It rarely comes within the scope of GARDEN AND FOREST to take note of a book so purely literary in its quality as this. But Mr. Curtis, in his interpretation of the work of his great contemporaries, has so clearly, though perhaps unconsciously, revealed the ennobling influence upon thought and life, of a right love of nature, that we feel impelled to add a word of comment on this special topic. In all these men of New England birth, including Mr. Curtis himself, we note that, combined with their stern moral rectitude, and having its root, perhaps, in the same source, was a deep and genuine love of nature, in which we trace the same earnest simplicity and sanity that marked their lives. And, as our attention is for the moment recalled to the work of these early interpreters of nature, we cannot but remark that they struck a deeper and fuller note than is sounded to-day by even the most sympathetic observers of the beauty of our fields and woods. Unlike some of our modern writers, who complacently accept the title of "High-priest of nature," these sincere men did not seek her solitudes primarily to make notes for a magazine article, or even for simple rest or recreation, but for spiritual strength and sustenance. Thus they always wrote with reverence of the beauty of the outward world, and in their work there is no trace of the petty egotism or of the restless craving for sensation which mars many of the so-called nature-records of this more flippant age.

This sensitiveness to the profounder influences of nature and to what may be called its spiritual beauty is most strongly marked in the men of Puritan descent, as if out of the strong had come forth sweetness, and it is conspicuous very early in the literature of the country. Mr. Curtis tells us that the school readers of half a century ago contained two poems which every boy and girl read and remembered. One of them was Bryant's "March," the other was Longfellow's "April," and though the curious reader may find in the first a more vigorous love of nature, and in the other a more tender tone of tranquil sentiment, both deal with the sights and sounds and suggestions of the American landscape in the early spring, and the chord, so lightly touched by the young poets, slowly swelled into rich harmony in the imaginative prose of Emerson, Thoreau and Hawthorne, the noblest of the group. In Thoreau this enthusiasm for nature was combined with a stern moral purity; in Hawthorne, with a rich, though sombre, imagination, and in Emerson, with a noble and serene philosophy, but in the moral fibre of all the three was the granite strength of the New England hills, and to their inspired imaginations the tranquil scenery about Concord was a symbol of the repose and balance and harmony of the universe.

In treating of Irving, Mr. Curtis brings us at once into a lighter, but still a wholesome, atmosphere. Irving, true son of the city that has always been cosmopolitan, cared for nature chiefly in its relation to humanity, and, though not indifferent to the grandeur and varied beauty of his native land, loved best the rippling landscape of England, made exquisite through cultivation, and in America the picturesque banks of the Hudson, which he has forever made his own by the right of the eminent domain of the imagination. The charming legend of Rip Van Winkle is, in Mr. Curtis's view, the more remarkable and interesting, in that, although the first American creation, it is not at all characteristic of American life, but, on the whole, is a quiet and delicate satire upon it. So, perhaps, it is to our credit that we love the kindly vagabond who asserts "the charm of loitering idleness in the sweet leisure of woods and fields against the characteristic American excitement of the overflowing crowd and the crushing competition of the city." Mr. Curtis, too, makes the acute observation that it is to the author of the *Sketch-book* and *Bracebridge Hall* that we owe the conception of rural England, whose charm yearly draws such hosts of American pilgrims to her shores. Only an American could have seen England as he described it, and invested it with an enchantment which the mass of Englishmen had neither suspected nor perceived.

Mr. Curtis's own attitude toward nature can best be noted in the essays which treat of Hawthorne and of Emerson. In these papers he has given us a description of Concord and its surrounding neighborhood, which is marked throughout by exquisite poetic feeling and the most delicate appreciation of its strangely tender beauty. Not only does he manifest deep insight into the profound significance of nature, of which its outward beauty is but the sign and symbol, but his ear is quick to catch the true note wherever

it is sounded, and in the very year that *Walden* was published he writes:

Thoreau's instinct is as sure toward the facts of nature as the Witch Hazel toward treasure. If every quiet country town in New England had a son who, with a lore like White of Selborne's and an eye like Buffon's, had watched and studied its landscape and history, and then published the result as Thoreau has done in a book as redolent of genuine and perceptive sympathy with nature as a Clover-field of honey, New England would seem as poetic and beautiful as Greece.

His interpretation of Emerson is, perhaps, even more sympathetic:

The imagination of the man who roams the solitary pastures of Concord, or floats dreaming down the river, will easily find its landscape in Emerson's pages. His writings have no imported air. If there be something oriental in his philosophy and tropical in his imagination, they have yet the strong flavor of his mother earth, the underived sweetness of the open Concord sky and the spacious breadth of the Concord horizon.

Conifers in the West.

THE only conifer that can be readily grown in the west, in addition to the Pines already discussed in this series, is the Red Cedar, Juniperus Virginiana. It is found native along the Kansas, the Niobrara and other western rivers, and thrives in the dry ledges that border the streams. It is too slow a grower, however, to be an attractive species to the western planter unless he desires it to increase variety in his grove.

The European Larch was given a thorough trial at the South Dakota Agricultural College, where trees three to six inches high were grown for a year in nursery, and then set with Box Elders. During the first three years they made only a sprawling growth, the laterals being stronger than the leader; then they began their upright growth, and in the course of the next two years assumed their normal shape. But last spring they were almost completely ruined by a late frost. The Larch leaves out very early, so that when late frosts are apprehended it had best not be planted.

The Red Pine, Pinus resinosa, ought to be as desirable a tree for western planting, but it has not been given a fair trial, probably because it is not commonly offered by nurserymen.

The Arbor-vitæ is not a success in the dry plains. A hedge of it was planted along the front line of the Agricultural College campus at Brookings, South Dakota, in 1887. It was heavily mulched, and grew well the first year, but, in spite of good care, it gradually failed, and now scarcely a vestige of it remains. Last October I saw a small hedge of it at Denver, Colorado, in fine condition, but it had been thoroughly irrigated.

It is difficult, if not impossible, to assign the Spruces to their proper places in western planting. The White Spruce, Picea alba, is a native of the Black Hills, and specimens of it pulled from the woods in that region and set in the forest-plats at Brookings are now making a slow, but healthy, growth. They were twelve to sixteen inches high when planted in 1889, and the tallest is now three feet eight inches high.

In several towns in central Kansas, such as Hutchinson and Salina, one sees Norway Spruces on the lawns, but they are not at all common. At the home of Secretary Morton, at Nebraska City, Nebraska, a Norway Spruce of his planting is now about thirty feet high, and measures thirty-four inches in circumference at three feet from the ground. Douglas Spruce, Pseudotsuga taxifolia, and the Colorado Blue Spruce, Picea pungens, have been extensively tested at Franklin, Nebraska. They are grown until twelve to eighteen inches high under shade, and are then transplanted into open nursery rows. The Douglas Spruce did not stand the extreme drought well, not a single good specimen being seen during my visit in October. This Spruce was also quite extensively planted in the Sand Hill experiment of the Forestry Division in 1889. In inspecting these plats in October last, a very few Douglas Spruce were found, but none looked as if they could survive another year.

The Blue Spruce has a much better record. Many sturdy young trees of it can be seen at Franklin, and there are remarkably fine specimens to be seen in the cemetery at Nebraska City, and at Salina, Kansas, while it is the most common ornamental tree in the lawns of Denver, Colorado. It is a very slow grower in the plains. The trees at Nebraska City are not more than one-third as high as a White Pine on the same lot, and evidently planted at the same time. The Denver trees have the advantage of irrigation. This Spruce varies greatly in color, specimens having a heavy bloom on the foliage being counted particularly valuable for ornamental planting.

It may be that one of the Spruces named may succeed when planted in the shade of Pines, as the species are shade-enduring, and this probably accounts for their poor growth in the intense light and heat and drought of the plains.

A few specimens of Balsam Fir, and very rarely, toward the south, Silver Fir, complete the list of conifers seen in the west. For general planting the Pines must take the lead, and of these, Pinus ponderosa and the Scotch Pine are probably the most promising.

Washington, D. C. *Charles A. Keffer.*

The Saguenay Region.—I.

THE gorge through which the Saguenay River flows is one of the natural wonders of the world. The deep stream winds but little, and its appearance is much like that of a narrow lake. The cliffs which wall it in are so steep and lofty that one who steams over its surface rarely catches even a glimpse of the country which stretches away from their tops. Ninety miles from the mouth of the river the gorge divides, the main part going on to Chicoutimi, the other extending a few miles south-west and forming Ha-ha Bay. At the head of the bay the rocky barrier is broken or worn away, and a wooded and grassy slope comes down from the higher land. Two rivers, the Ha-ha and the Mars, rush down the slope with many rapids and waterfalls, while smaller streams hurry into the bay through narrow gorges. At the mouth of the Ha-ha stands the village of St. Alexis, or Grande Baie, and by the mouth of the Mars, St. Alphonse, or Bagotville, the former names being most in use with the French Canadians. St. Alphonse is the principal landing-place for steamers, and is most picturesque in situation and surroundings, the rocks rising abruptly immediately behind the village. The heights above offer delightful views of the bay, and command a wide expanse which is bounded in the distance by low mountains, with an opening down the river. This village I selected as a place of rest and recreation in the month of August, making excursions into the surrounding region on foot, by boat, or by means of that universal vehicle of the rough country, the buckboard wagon. A shorter stop was made in the early part of September at Tadousac, near the mouth of the river, with a brief stay at Chicoutimi.

Aside from the scenery, in which the sublime and the beautiful are charmingly mingled, the region provides a varied field for botanical work. Along the sides of the bay the gneiss and granite rise in massive cliffs and ledges, or form low ridges which stretch away from the shores. Though frequently bare, many of them show characteristic rock vegetation, while others are more or less abundantly covered with Fir, Spruce and Pine. Back of these rocks, and overlying them as they extend away from the river, are clay lands, into which the streams have cut deep valleys, bordered with hills and bluffs along the watercourses. The clays are subject to extensive landslides, which considerably change the contour of the hills when of recent occurrence. They provide a good soil, and where they overlie the country is the principal farming region. Back of these and at a higher level are sandy lands, interspersed with Pine plains, with their characteristic plants. Only a few miles away are numerous small lakes, abounding in

trout and aquatic vegetation. There are many swampy areas, and springs are everywhere abundant.

The prevalence of Coniferous trees was to me the marked feature of the forests. What remains of the woods on the clay land is largely made up of deciduous trees, and this, to some extent, is true of gravelly and sandy land. But the Hemlock is commonly interspersed with them, with Tamarack, Fir, White Cedar and Spruces occupying boggy areas. The deciduous trees are chiefly the Canoe, the Yellow and the Cherry Birch, the White Elm, the two Poplars (Populus tremuloides and P. grandidentata), the Black Ash, the Red and the Sugar Maples. Among smaller trees are the Mountain Ashes, Pyrus Americana and P. sambucifolia, which, in rocky localities, are often reduced to shrubs, fruiting at the height of four or five feet. The Alders are among the most plentiful of shrubs, Alnus viridis growing in the rocky woods and on the ridges, while the Speckled Alder forms dense thickets by watercourses and in swamps, sharing the ground with various Willows, the Sweet Gale and different kinds of Cornel. The last are common in the soils of all land adapted to their growth, as well as species of Viburnum belonging to more northerly regions. The Staghorn Sumach and the Beaked Hazel-nut were frequently seen, bordering the woods or making clumps of bushes in the open fields. The Striped and the Mountain Maple bushes line the sides of ravines and hang over the streams, or are interspersed among the trees which cover the steep slopes.

The White and the Jack Pine were the only Pines noticed. They are mostly confined to the sandy or gravelly land, or are scattered about on the rocky ridges. Pinus Banksiana is abundant in the poorest soil, forming Pine Plains in the sand. In such localities it is usually a low bushy tree, becoming a mere shrub on the rocks, where it can root in the scanty soil of some crevice or cling to a narrow shelf. The Arbor-vitæ, growing in the thin soil of some of the ledges, also forms a shrub of straggling habit, spreading over the ground to a distance of two or three feet from the stem, and fruiting freely when but a foot or two high. In the areas of rock by the shores of the bay the Coniferous trees are often curiously intermingled. The water trickling from seams and crevices has given rise to growths of Sphagnum and other mosses, which furnish a soil in which the different kinds take root. Here the White Pine, the Larch, the Fir and the Spruce are in such close relations that their branches touch each other. Their differing shades of green are admirably shown by this proximity, and offer a picture that is always charming.

But little merchantable White Pine is left in the vicinity. It has all been appropriated by the lumbermen or destroyed by fire. The logs at the mill in St. Alexis, the only one which remains in use on the bay, were all from quite small trees, some barely eight inches in diameter. At Chicoutimi I found large mills supplied by the forests of the upper Saguenay and its branches, and which furnished its principal industry. Here many of the logs were larger, showing more available material, though much smaller on the average than those of the forests of the Great Lakes and the Alleghanies. The smaller logs were largely cut up into "deals" and "battens," planks four to six feet long and six to eight inches wide. They were principally for export to distant lands, many, I was told, going to Australia. Being quite free from knots, they make good material for all articles to which lumber of such small dimensions is adapted.

Chicago. *E. J. Hill.*

What is a Cantaloup?

THERE is a dearth of distinctive terms at command for the classification of our rapidly multiplying varieties of garden vegetables. Every effort should be made to fix with clear definitions the few which we do have, and to discourage every tendency to their incorrect use. As new vegetables appear they too often receive incongruous or unintelligible names, and the nomenclature of this class of plants has become almost intolerable.

One of the good words, now badly mistreated, is the term cantaloup, as applied to a group of muskmelons. As used at present the term is of doubtful signification. In the south it is applied generally to all muskmelons. Certain well-informed horticulturists of southern experiment stations have issued bulletins on cantaloups, and they include under this head all the varieties of muskmelons. According to a limited acquaintance with southern people, the term cantaloup, when applied more closely, means a muskmelon of the Nutmeg class, small, globular, netted and green-fleshed. In the north, cantaloup means just the opposite; that is, a large, ovoid, rather smoother, yellow-fleshed fruit. The varieties bearing the names Cantaloupe, Improved Cantaloupe, etc., sent out every year from northern seedsmen, are of the latter description.

Probably the term is incorrectly used in either case, though its application to the small, netted, green-fleshed melons, is doubtless farthest from propriety. Naudin, whose work I do not have at hand, is quoted by Bailey* as "the most excellent authority upon the cucurbits," and from him Bailey adopts the following definition of Cantaloup (spelling it Cantalopé), placing this group first among nine cultivated groups:

"Cantalopes, Cucumis Melo, var. Cantaloupensis, are characterized by hard and more or less warty, scaly or rough skins, and they are often deeply furrowed or grooved. The name is derived from Cantaluppi, a former country seat of the Pope, near Rome, where these Melons were early brought from Armenia."

Vilmorin and Andrieux† use the word with much the same definition, but spell it Cantaloup. They say: "There are numerous classifications of melons. Of these we shall follow the simplest and most common one, which divides them into two groups of the Netted and the Cantaloup or Scabby-skinned melons." Nicholson‡ says: "The Cantaloup melon has a remarkably irregular surface, and both the skin and flesh are irregular in color." Funk and Wagnalls§ give a definition which is clear enough, but somewhat confusing when considered with those cited: "A variety of Muskmelon having a yellowish or pale green skin and reddish flesh." In connection with this definition they give a quotation from F. S. Cozzens‖ which bears directly on the discussion in hand. He says: "You call all kinds of melons Cantelopes in Philadelphia, but permit me to say that it is a local error." The definition of *The Century Dictionary* is as follows: "A variety of Muskmelon somewhat ellipsoidal in shape, ribbed, of a pale green or yellow color, and of a delicate flavor." *The International Dictionary* says: "A Muskmelon of several varieties, having when mature a yellowish skin and a flesh of reddish orange color." In *Murray's New English Dictionary* Cantaloup is defined as "a small, round, ribbed variety of muskmelon of a very delicate flavor."

Looking over these definitions one will be struck first by the general uselessness for scientific purposes of those given by the dictionaries. All of the dictionary definitions, especially that of *The Century Dictionary*, seem to lean to that description of fruit spoken of as coming from the seeds of northern seedsmen. On the other hand, the definitions of Nicholson, Vilmorin and Bailey substantially agree that a cantaloup is "a hard, and more or less warty, scaly or rough-skinned melon, often deeply furrowed or grooved," and quite definitely to be separated from the netted varieties of the Nutmeg type. It is worth remarking that these concurring authorities represent France, England and America. Unquestionably this definition ought to be accepted. Surely our horticulturists ought to agree on something and save to us this needful classificational term.

* Bailey: Some Muskmelon Botany, *American Gardening*, vol. xiv., p. 206.
† *The Vegetable Garden*, English edition, p. 328.
‡ *Dictionary of Gardening*, vol. ii., p. 350.
§ *Standard Dictionary of the English Language.*
‖ Cozzens, "Sparrowgrass Papers," ch. x., p. 134.

Regarding the spelling of this word there is also some doubt. The following are given: Cantaloupe, cantaloup, cantaleup, canteloup, canteloupe, cantalope, cantelope. Nicholson, Vilmorin and De Candolle, who follows Naudin, agree in spelling it cantaloup, and the weight of authority is certainly with this spelling. However, the spelling is not of so much importance to us as the correct use of the word.

Oklahoma Agricultural College. *F. A. Waugh.*

New or Little-known Plants.

An Arizona Agave.

NO group of North American plants, with the exception, perhaps, of the Cacti, is more difficult than the Agaves to understand from specimens preserved in herbaria; and not much light is thrown upon these plants by the occasional isolated individuals which drag out a more or less miserable existence in the confinement of northern glass-houses. Much confusion naturally exists in the identification of plants which have been named for the most part from half-grown and often flowerless individuals in European gardens, and it is more than probable that the same species often appears in books under numerous names. There are no plants, however, that are so well suited to produce certain effects in the garden, especially in countries warm and dry enough to enable them to flourish in the open ground; and it is desirable from the horticultural as well as the botanical point of view that they should be studied under the most favorable conditions. These can only be found when all the forms of the genus planted side by side in some favorable region carefully selected for the purpose are studied by a competent botanist in all their stages of development. This is the only way the limits of the species can be determined and their synonymy satisfactorily settled. The astronomical observatories of some of our universities establish posts of observation in remote countries in order to study certain phenomena of the heavens under the best possible conditions, and the great scientific gardens of the world might in the same way increase their usefulness by establishing in regions of peculiar climates collections of certain groups of plants which cannot be studied in herbaria, or under the artificial conditions afforded by glass-houses. For example, all the Agaves, Dasylirions, Beaucarnias, Yuccas, Nolinas and Cacti would grow to perfection in a garden in southern New Mexico or Arizona, and in such a garden a good botanist would be able to learn, in the course of a few years, more about these plants than has ever been learned before. Agaves will never be known until this method is adopted, and Cacti certainly will not, for a Cactus in a pot rarely fruits, and often changes its appearance to a degree that makes it unrecognizable. For the satisfactory elucidation, therefore, of the flora of northern Mexico and the adjacent parts of the United States, where such plants are the conspicuous and most interesting features of the vegetation, a well-equipped local station is essential, and we hope some day to see this plan put into operation. In the mean time, labor expended in herbaria on the study of the plants we have mentioned is practically thrown away, as it can only be partial and never final.

There are not many species of Agave that grow spontaneously in the territory of the United States, but some of these are very beautiful. One of these species appears in the illustration on page 185 of this issue, made from a photograph, for which we are indebted to the courtesy of Mr. J. G. Lemmon, the well-known botanist of Oakland, California, who secured it on the foot-hills of the Huachuca Mountains, in southern Arizona, where this plant grows in large masses, usually along the upper edge of the mesa and below the forests of Live Oaks which clothe the lower slopes of the mountains and appear in the background of Mr. Lemmon's picture. We suppose the species to be Agave Huachucensis of Baker. It resembles, however, in many respects the Agave applanata of Lemaire, and is not readily separable from Engelmann's Agave Parryii, which, in its young state at least, is not always distinguishable from the Agave Palmeri of the same author, or from a species of western Texas into which, perhaps, this plant also ranges. The name, however, is not important for our purpose, which is to call attention to a very beautiful plant which seems to be still little known in cultivation.

Plant Notes.

Cercis Canadensis.

THIS, our native Red Bud, is one of the most beautiful of the small trees which enliven with brilliant flowers the sylvan scenery of eastern North America. The flowers of all the species of Cercis are rosy pink, and are produced before the leaves in clusters or short racemes which cover the branches, and sometimes appear also on the trunks, so that when the trees are in flower they are masses of color. West of the Mississippi River, especially in some parts of Missouri, in the Indian Territory and southern Arkansas, the Red Bud is so abundant that it lights up the whole landscape during the month of April, when a journey through that region is a perfect delight for the lover of flowers. The beauty of this tree, too, is often heightened by the contrast of its rosy pink flowers with the pure white flowers of one of the Hawthorns, Cratægus mollis, and with those of the Flowering Dogwood, these trees frequently growing and blooming together.

The Red Bud, although it does not grow north of the valley of the Delaware River, in New Jersey, is perfectly hardy in New England; it is, moreover, an admirable garden-plant; and it can be used with the best possible effect against a dark background of conifers, which serves to bring out the beauty of its flowers. Although under favorable conditions it sometimes becomes a tree fifty feet high, the Red Bud begins to flower when only a few years old, and in good soil it grows with great rapidity.

The Cercis Siliquastrum, of southern Europe, has rather larger and more brilliant flowers, but, unfortunately, is not hardy in the northern states. A Chinese species, Cercis Chinensis, is a rather low shrub with large deep-colored flowers, which is often cultivated in the neighborhood of this city and Philadelphia, although farther north it is not hardy. This plant is often found here under the name of Cercis Japonica because it was first brought to this country from Japan, where it has long been a favorite garden-plant. The other species of Cercis, of which two are American, one Texan and the other Californian, are not in cultivation. But probably no other member of the genus is as valuable in our gardens as the eastern American species. It is one of a group of early-flowering small native trees which ought to be generally planted in our parks and large pleasure-grounds to brighten in early spring the borders of woods and give color and variety to the landscape at the time when most deciduous-leaved trees are bare of foliage and flowers are most appreciated. The Flowering Dogwood is one of these trees and the native Crab-apple is another; all the Hawthorns and the arborescent Viburnums can be used in this way.

All these trees harmonize perfectly when planted together, and never appear out of place in the composition of an American park picture. They belong to our flora, and so do not produce a discordant effect when they are used in the foreground of an American landscape, while an exotic plant equally beautiful in color and habit, like the Lilac, for example, gives, when used in this way, an effect of unrest and unsuitableness which, although difficult, perhaps, to explain, is, nevertheless, real. Fortunately our American flora is so rich and varied that the makers of park landscape who may desire to produce natural sylvan effects here are not obliged to have recourse to foreign lands for their material. Our woods can supply them with all the plants they need, and the best compositions for

study, and if they study Nature faithfully they should be able to produce the best results that are obtainable in this country. Exotic plants are often very beautiful, but the best of them, whether they come from Japan or China, Europe or the Orient, look strange and out of place in a truly American sylvan scene such as the park-maker, who makes the most of his opportunities, should try to produce for the weary workers in American cities.

SALIX CANDIDA.—As yet little attention seems to have been paid to the cultivation of Willows for the commercial value of their flowers. It is well known, however, that bunches of Willow-catkins are sold in great quantities in our cities every spring. The supply is usually drawn from wild natural plants, but it is possible that a well-managed plantation would yield a fair profit from soil that would be otherwise of little value. The earliest-flowering and largest and most showy-flowered varieties ought to be selected, of course, and for this purpose Salix candida might not prove so profitable as some others, like S. discolor or S. humilis, compared with which it is a very small and much less vigorous plant. On account of the peculiar beauty of its blossoms, however, it is worth having in any collection of shrubs. Ordinarily, in its native cool bogs and swamp ground, this Willow is a straggling-stemmed plant from two to four or five feet high. Transferred to the drier ordinary ground of gardens it thrives very well, although not inclined to assume the neat, compact, bushy habit desired by many planters. The peculiar interest possessed by this species over its numerous congeners lies in the pretty pink or rosy red color of the stamens in the male plant. These stamens are tipped by red anthers, which, as they open to shed pollen, are changed to a bright light yellow color. The catkins are from half an inch to an inch in length and rather globose in outline when in full flower. On the female plants the catkins are more slender and they have a hoary white appearance, on account of the soft and dense white tomentum which covers the ovaries, the latter being tipped by dark red stigmas. The twigs and the under surface of the leaves, and the upper surface when young, are covered by a dense white tomentum, giving the plant a grayish or hoary aspect, on which account the common name of Hoary Willow, or Sage Willow, has been given to it.

ANDROMEDA SPECIOSA.—A few well-flowered examples of this species were on sale in the leading florists' establishments of New York at Easter, and although these Andromedas are native shrubs found on borders of ponds all through the coast country, from Florida to North Carolina, they were novelties to most people who saw them. A. speciosa certainly rivals many of the finest Heaths when it is forced, with its pure white, bell-shaped flowers, sometimes half an inch long, borne on the naked branches formed the year before. When plants have been once forced, if they are kept in pots during the summer they will flower more freely the next year than they did the first season after they were taken from the open ground. But, although the natural home of this plant is in the south, it will survive the winters as far north as New England. Since the buds are formed in the autumn on the terminal shoots the wood does not always get well ripened in moist seasons, and, therefore, it is well in exposed situations to peg down the branches and cover them up. It is practically hardy, however, and one of the very best of our dwarf-flowering shrubs. It grows from two to four feet high, has a neat and compact habit, with shining light green leaves, which hold their color late into autumn, although they sometimes change to yellow, brown or purple. It was a popular plant in England early in the century, and we see complaints in the English horticultural papers that it has of late years been neglected, but it is doubtful whether it is any more rare in England than it is here. There is a variety known as Pulverulenta, which is a still more dwarf plant and somewhat neater, with bluish gray or chalky white leaves, which are covered with a dense bloom. Although Andromedas are

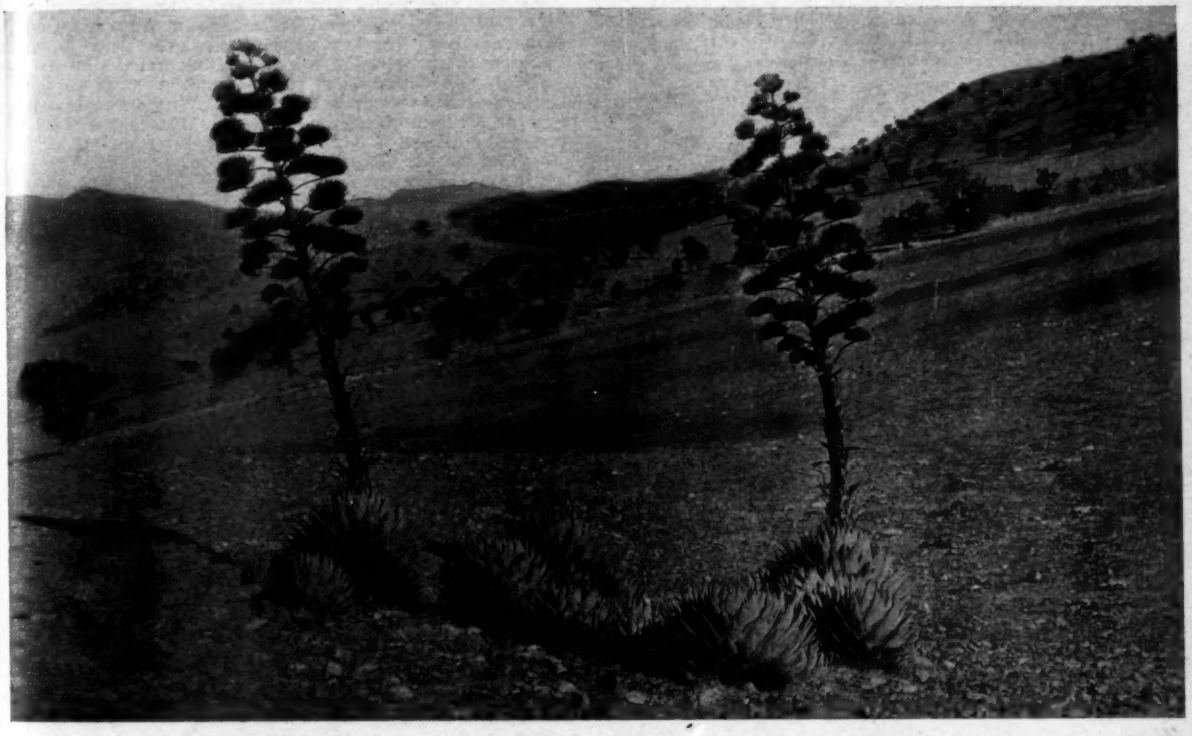

Fig. 28.—A View of the Foot-hills of the Huachuca Mountains, Arizona, with Agave Huachucensis in the foreground.—See page 184.

Ericaceous plants, peat soil is not necessary for either the species or the variety, and they will both do well in any soil which is not too dry. They propagate slowly from cuttings, the forced wood being best for this use; or they can be grown from seed, and the seedling plants will flower the third year.

Nymphæa Marliacea ignea.—This new Water-lily, to judge from material sent by Mr. J. Brydon, is likely to be a first-rate addition to our hardy Nymphæas. As noted in Garden and Forest last week, it is one of Monsieur Marliac's new series, and the plants noted are flowered here for the first time. It is superior to N. flammea and N. Laydekeri in size of flower and foliage, which is only slightly mottled. There is also a break away in the form of the flower and in the more numerous petals. The petals are a rich, deep magenta, self-colored, rather than a flame color or orange-red, as the name would indicate. The stamens, however, as in the other varieties, make a mass of orange. If the specimens shown are a fair indication, this variety, Ignea, outclasses Flammea in all respects, and would be the more generally valued of the two varieties.

Tecophilæa cyanocrocus.—This bright little bulbous plant, which has survived several years in open borders near this city, seems to have found the last winter too severe for it in some gardens, for plants which were considered well-established have not appeared this spring. If this so-called Chilian Crocus has survived in the gardens of any of our readers we should be pleased to know something about its treatment. It has been classed among greenhouse bulbs, but we still have hopes that it may be useful in outdoor gardens with a little extra care. Perhaps it would be able to endure the cold if the bulbs were dried out thoroughly during the summer. The flower of Tecophilæa cyanocrocus is charming, standing erect, something like a Crocus, on a short scape, with six petals slightly spreading, about two inches long, and of the deepest gentian blue with white markings at the base. There are other species and garden forms of the plant, but the species of which we speak is hard to improve upon. Although introduced nearly twenty-five years ago it remains comparatively rare.

Cultural Department.

The Munson Grape Trellis.

THE propriety of using this term, the Munson trellis, has been questioned by a critic, who says that neither the trellis nor the system of training is distinct from other systems; that they are all Kniffin systems; that, at best, what goes by the name of the Munson system should be a variety of the Kniffin. It seems clear to me that the trellis and the training are distinct enough to bear special designations, and that the use of Mr. Munson's name is justified by the facts and sufficiently authorized by its recognition in Professor Bailey's *American Grape Training* and the last edition of the *Bushberg Catalogue*.

It may be well to explain, for those not intimate with this form of trellis, the construction used and advocated by Mr. T. V. Munson. According to this method the posts are made six feet high. At the top runs a cross-piece two feet long, at each end of which is fastened one of the wires of the trellis. Mr. Munson originally used two posts set in a V shape, with the tops two feet apart. The result is the same either way. Eight inches lower than the two side wires there is a third wire fastened to the posts. This brings the three wires into a very broad V shape. There are no other wires on the trellis.

The system of pruning, which forms a necessary part of the scheme, provides that one or two stems be brought up to the lower or middle wire, and that from these stems canes shall be run each way along this wire. From these canes the bearing shoots come at right angles, and naturally fall out over the top wires. Renewals are most easily made by spurring at the point on the lower wire, where the canes are given off from the main stem, though it is often a very easy matter to renew quite from the ground.

This system has been in use at the Oklahoma Experiment Station from the first, though that is not very long, and has given abundant satisfaction in most particulars. At the first glance those who are familiar with our severe winds, but not with the working of this trellis, are much inclined to fear great damage from the whipping of the shoots, but, as a matter of fact, this serious difficulty is nearly overcome by the Munson trellis. It is one of the most vexing problems in the ordinary horizontal-arm training, but the increased height of the trellis does not increase the trouble. On the other hand, the peculiar position occupied by the growing wood gives it almost complete immunity. The green shoot is supported in two places near its base, while most of its length hangs free. Though it may swing in the wind, there is nothing against which it may strike, and so the damage is avoided.

Mr. Munson sets forth his ideas of the advantages of this system in Professor Bailey's *American Grape Training*, page 81. However, in our experience here, his summary is unsatisfactory. Some of the advantages which he claims do not seem to be peculiar to this system of training. Others are of slight importance. Those which are important ought to be more emphasized. In our experience the chief advantages of the system are (1) that it greatly reduces the damage from the wind; (2) that it reduces damage by heat reflection from the soil; (3) that it saves summer tying. The first of these advantages has already been explained. Regarding the second, it should be said that in this country, wherever bunches of fruit hang near the ground, they are usually more or less dried out by the excessive reflection of heat from the soil during hot summer days. The loss amounts to a great deal. A conservative estimate placed this loss at from ten to sixty per cent. through this country last season, and in some exceptional cases the crop was quite destroyed. With the fruit hanging five or six feet from the ground and overshadowed by a canopy of foliage at least two feet wide, this evil is evidently much mitigated. The young shoots do not need to be tied at all, but are left to swing freely from the support which is given at their bases. In most other systems summer tying is a considerable and expensive item. Some summer pruning usually has to be done, but this is much facilitated and probably reduced in absolute quantity by the Munson training.

Certain weak-growing varieties, like the well known Delaware, do not find this trellis adapted to their needs. Many other circumstances may decide against its use; but it is being widely adopted through this country, and there are many favorable reports from it in other states.

Oklahoma Agricultural College. *F. A. Waugh.*

Kerosene Attachment for Knapsack Spray Pumps.

THE article of Professor Goff in Garden and Forest, April 10th, suggests a note on the improved form of a kerosene attachment to the knapsack sprayers which I have just perfected. A full description of this new apparatus is published in Bulletin No. 32 of the Mississippi Experiment Station, to which the reader is referred for any further details. Professor Goff made his first attachment to a Climax-pump, and in September of 1893 this attachment was given a trial at the station here. After ascertaining that the principle of the mechanical mixture of kerosene with water was correct, plans were submitted to the manufacturers and an attachment was made to the knapsack pumps.* For garden work, and, in fact, in most cases where we wish a mechanical mixture, excepting in orchards, the knapsack pump is undoubtedly superior to all others, and for this reason the attachment was made to this form of pump. The instrument reported upon by Mr. Marlatt, at the last meeting of the Association of Economic Entomologists, was this attachment to the knapsack pump, and his lack of success in no way affects the principle of the mechanical mixture. Previous to Mr. Marlatt's publication I had found two objections to the attachment: (1) The mixing of the kerosene and water in the pump when the stopcock is left open; and (2) the lack of graduation in the stopcock, so that the proportions in which the separate fluids were used could only be ascertained by first pumping the mixture into a graduated glass jar.

These objections, however, have been obviated in the new apparatus shown in the figure (see page 187). By means of two check valves at right angles to each other the kerosene and water are both permitted to go into the pump, but neither can go back, and so all possible mixture of the two liquids is prevented, except in the pump when operating. A brass gauge rod, which bends around to the side of the main tank, where it fits into notches on a gauge plate, is connected with the stopcock, the spring of the rod holding it firmly in place until charged by the operator. Each notch on the gauge-plate is plainly marked, so as to indicate the proportion which will be

* Bulletin No. 30, Mississippi Station.

pumped when the gauge-rod is placed in the different notches. Beginning at the top the notches read: $\frac{1}{10}$, $\frac{1}{9}$, $\frac{1}{8}$, $\frac{1}{7}$, $\frac{1}{6}$, $\frac{1}{5}$, $\frac{1}{4}$, $\frac{1}{3}$, $\frac{1}{2}$, 0. That is, when the rod is at the bottom notch the stopcock is closed, and when at the top notch equal parts of kerosene and water will be pumped, and so on. The gauge-rod can be reached by the hand when operating, so that a change from one proportion to another can be readily made. Thus we have very nearly a perfect apparatus. Kerosene is a most valuable insecticide, and is always obtainable. In spite, however, of the oft-repeated statement that a perfect emulsion can be made by any intelligent farmer, the fact remains that nine-tenths of our farmers never really accomplish this, and this is why the emulsion has not been more generally successful.

We now know but little as to the number of injurious insects which can be successfully held in check by this kerosene attachment to the knapsack pump. Many entomologists assure me that they will give it a thorough trial during the coming season. For the benefit of any who wish to try this attachment, I would state that it is now being manufactured by the Deming Company, Salem, Ohio.

Agricult'l College Experim't Station, Miss. *Howard Evarts Weed.*

Fig. 29.—Improved Attachment for using Kerosene with Knapsack Sprayers.

Insect Pests.

NO one knows until he undertakes to cultivate the soil how many evils plants are heir to, and these seem to be on the increase. The insect pests, owing, presumably, to the survival of the fittest, seem to be more highly educated than of old, and it is only by continued watchfulness that successful crops can be grown. It seems to me, after a few years' study of this phase of garden routine, that insecticides are most profitably used as preventives. The process of fumigation is by no means the best method to adopt, especially with houses of mixed plants, such as are generally grown for gardens that exist for the pleasure of the owner, and not for commercial purposes. In the use of tobacco in its various forms as an insecticide we have a great advantage over European cultivators in that we can get an article good, cheap and pure in tobacco-stems fresh from the factory. That they lose much of their strength through keeping and exposure there is no doubt. If fumigation is necessary these stems should not be used, for there is too much heat generated for the amount of smoke given off. A cheap grade of damaged leaf tobacco has been found to be the best and cheapest for the purpose, for so little smoke to kill that it rarely has density or heat enough to burn delicate foliage. It is a long time now, however, since we used the smoke-pot, and this is due entirely to the scattering of the stems on the benches between the pots or on wire netting placed on the heating pipes. If used in the latter way, and damped occasionally, so as to give off a medicated vapor, hot water is almost as good as steam pipes as a vaporizing medium, and the stems will retain their strength for many weeks.

Those who have tried to grow Cinerarias and Calceolarias know how liable these are to the attacks of aphides, and how difficult it is to fumigate without damaging the plants. These plants furnish a striking proof that fumigation is not the best way to kill insect pests. It is barbarous to subject the plants to such an ordeal, to say nothing of the operator, when a sprinkling of stems around the pots, renewed two or three times during the season of growth, will quite clear them of insects, so that there is a real pleasure in growing the plants.

We have always had a great deal of trouble with what is known in common garden language as the Orchid thrips, a little white insect, barely visible to the naked eye, but which, before it is discovered, does great damage to the young foliage of plants. Cypripediums are happy hunting-grounds for these thrips, and there is no insecticide that I know that will check them except tobacco-stems liberally sprinkled between the plants. If badly affected it is well to sponge the foliage with an insecticide first to get rid of the older ones, and the young insects will be killed off as they hatch out. It is said that as the tobacco-stems decay a large amount of ammonia is given off into the atmosphere, producing a healthy green in the leaves, more especially of Orchids. I am of opinion that this is something more than a theory. By taking a bunch of tobacco-stems and damping them it will be found after fermentation sets in that a pronounced quantity of ammonia is given off into the atmosphere for the plants to breathe. While it might be possible to overdo the matter in the use of too much of the tobacco-stems at a time, I have never had this occur. If their use is not so plentiful as to cause an untidy look on the benches it is safe to say there need be no fear as to damage, and preventive measures are much cheaper than any others.

We have lately had for trial a new insecticide, known as Lemon oil; it is a preparation similar to that called Fir-tree oil, and acts in the same way when mixed with water, but we find that it is not so liable to do damage as the latter, and is of use for a greater variety of plants. There is no need to wash off the mixture from the roots of plants as it is said to be also a fertilizer of the soil.

Tobacco-dust is now put up by all dealers and is a most effectual remedy for aphides. This also is a fertilizer, and if it is necessary to give more than one dusting it will benefit the roots as well as kill the insects. There seems to be a great difference in the quality of this article as put up for sale. We were induced to buy a barrel of it once, the price being low when bought in bulk; this particular lot was practically worthless, and it is reasonable that pure tobacco-dust could not have been sold at the price paid. I have found that the coarser grades are the purest and the best to use.

A word should be said for that best of all insecticides, cold water with a good force behind it. There are few insects that can withstand this treatment, especially if the Stott sprayer is used. We have four of them in steady use, and plant-growing has been much simplified by this invention. When some means is devised for mixing the various insecticides with the water as it comes from the main, there will be little excuse for unhealthy insect-ridden plants in the garden. White scale insects on Orchids are usually very hard to eradicate, especially on Cattleyas, and these are often infested when brought in from their native woods. The Stott sprayer makes clean work, and does not injure even the young growing tips of the roots if used carefully. If the least trace of scale is noticed it is best to apply this cure at once, for it is surprising how rapidly this insect debilitates plants. It should, perhaps, be said that our water-pressure is over one hundred pounds as it comes from the main, but a much less force would be sufficient, though how little would be enough I am unable to say.

South Lancaster, Mass. *E. O. Orpet.*

About Daffodils.

IT would be interesting to know which of the Spanish Daffodils are referred to by Mr. Orpet as not reliable in Massachusetts. The mountains of southern Europe, from Spain to Italy, are rich in Daffodils of many forms, and it might be expected that some of these would fail in other countries, although the cause of the failure might be something besides the rigor of our winters. Certainly Narcissus major and N. minor are as hardy as anything in the family, and many of the Ajax, or large trumpet section, which, though bearing fancy names, are collected and selected bulbs, bear witness to the general hardiness of the family. Outside of the Tazettas, which come from the lowlands, and the Bulbocodiums, which are mostly north African, the entire family is very hardy here and I can see no distinction in that respect between the species and the hybrids. White Daffodils are credited with being rather more delicate than the yellow kinds, but of these my experience is limited, having grown only N. moschatus and Mrs. J. B. Cannon, both of which hold their own with the other varieties, and the little white N. triandrus is quite as hardy and vigorous within its limits as N. Emperor. As the white of a Narcissus-flower is not necessarily due to lack of vigor, like the variegation of a leaf, there seems no reason why they should be weaker than plants of other colors. In the case of white Narcissi, which are not plentiful, and of other rare and expensive kinds, the trouble comes from the anxiety to do the very

best, so that they are placed in too rich soil, or in some other way they are coddled to death. A bad memory as to details of cost is a good thing in the garden, and with such a memory one is more likely to treat all his plants on rational principles, which means leaving them alone and trusting much to nature.

I understand that a moderate amount of well-rotted cow manure worked in the ground makes the best soil for Narcissi, and it is well, though not absolutely necessary, to set each bulb in an enveloping layer of sand. Owing to a lack of this or any other nutriment my bulbs do not throw very long stems, but I think the flowers are more purely colored than those which are better fed. Purity of color is of more importance to me than size or length of stem. Were space available I should move my Narcissi every second or third year to new ground, or to that on which some other plants had been grown, after manuring. As a matter of fact, if closely planted, they require such changes, if only to free them from crowded offsets. They will, however, live for years with little fertilizing and crowded to suffocation, and even among the roots of trees or plants through which they can scarcely force their leaves. I once found a colony of bulbs under a clump of perennial Phlox, which was at least three or four years old, and whose roots were so matted that it was necessary to cut them apart to extract the bulbs. They did not flower there, but as they were the double Poeticus they would probably not have flowered any way. This would indicate that plantings in the grass are perfectly safe. They certainly lead to satisfactory results, as the grass furnishes a charming foil at flowering-time. This practice, however, is scarcely to be recommended for small gardens. These, unfortunately, have their limitations, and among their limitations is the very unfortunate one that everything is too much in evidence or under one's glance. In a small garden one cannot get nice effects, like a glow of gold from Daffodils in the distance, or plant some of the little treasures deftly, so that one always finds them when in flower with a certain sense of discovery to heighten the pleasure. I wonder how many large pleasure-grounds there are in the United States which are planted with such natural art that the weary owner could find interest and instruction in every likely nook, shady corner or sunny slope, everywhere restful pictures, and nowhere any intrusion of work and evident expense. The current landscape practice seems to be the planting of masses of plants for great display of color, as if a person enjoyed being gorged even with beautiful colors. Masses of color have their uses if they are not too conspicuous or not so numerous that they intrude upon one from every point of view. But the charm of the garden is mostly found in the more modest pictures produced by some happy combination of form and coloring. Pictures there are often of which one only catches a hurried glance, yet they fill the eye and satisfy us with their beauty.

Elizabeth, N. J. *J. N. Gerard.*

Plants for Bedding.

AS the season for bedding out is now fast approaching there is little time left for further propagation, but if the stock of such plants as Coleus, Ageratum, Alternanthera and other quickly rooting species is insufficient a few may yet be struck, and these will be found useful in places where small plants are required. Hardening off is a matter of the greatest importance for all of these plants, although it is often neglected. The work must be done gradually, or if the plants are suddenly exposed to outdoor conditions after being nursed up in a warm greenhouse they will receive a check from which it will take them weeks to recover. Where a house can be devoted to these plants alone the work will be greatly facilitated, as the temperature of the house can be gradually cooled down until full air is left on night and day. If a separate house is not possible, cold frames will have to be utilized. The plants will be quite safe in these any time after the first of May with a slight covering over the sashes on cold nights. One drawback to the frames is that they are only suitable for the smaller classes of plants. For large specimens, as Agaves, Yuccas, etc., space must be found in a cool house for a few weeks previous to their being set out, for, although seemingly robust, this class of plants is as apt to receive a check as a tender Coleus. The results of a chill, though not apparent at the time, would tell afterward in the discoloring and dropping of the bottom leaves. A sheltered corner should be selected, and all the plants placed in the open air at least ten days before they are intended to be planted, and some means devised whereby they can be slightly protected should the nights prove to be too cold. The time of planting must be regulated according to the hardihood of the plants used. For the more tender species, such as Coleus, Alternanthera, etc., the first of June is soon enough to trust them in the open ground in this vicinity, but where a large amount of bedding has to be done it is often necessary to commence a little earlier.

Tarrytown, N. Y. *William Scott.*

Notes from Baden-Baden.

AMONG Snowdrops I beg to mention Galanthus Caucasicus grandis as one of the very best; the color of the large flowers is the purest white, and healthy robust plants grow in any situation and any soil very evenly. Colchicum Szovitsianum and C. luteum deserve praise among the earliest harbingers of spring; the former has small bright pink flowers growing in bunches up to the number of twelve, and the latter is remarkable for its bright deep yellow flowers; I have raised a fine variety of it, the flowers of which are twice the size of the typical form. The early flowering Hyacinthus ciliatus (Muscari azureum) comes from the heights of Asia Minor in several distinct forms. Of these the varieties Robustus and Amphibolis are stronger growers, and the best of all is the variety Freynianus, the turquoise-blue of the spikes being very showy. Chionodoxa Luciliæ is now coming on with pink and white flowered varieties, which are very pretty. A few years ago I introduced a variety af Anemone blanda, which I called Scythinica; it is a very distinct plant, its flowers being mostly of the purest white. It is quite a picture to see a clump of this in sunshine. Fritillaria alpina is a small but lovely species; the chocolate bells have a bright yellow rim which causes a beautiful contrast. All the above are quite hardy.

Baden-Baden. *Max Leichtlin.*

Correspondence.

Fall Planting for Sweet Peas.

To the Editor of Garden and Forest:

Sir,—Do you consider it safe or desirable to plant Sweet Peas in the fall of the year? Will plants produced from autumn-sown seed have any superiority in vigor or in the size of the flowers over those planted in the spring? If autumn planting is desirable, at what time should the planting be made and how deep should the seed be planted?

Cambridge, Mass. *S.*

Whether Sweet Peas can be successfully planted in autumn depends largely on the latitude. In the southern states fall planting is a necessity, for this is the only way to give the plants a cool soil in which to make a strong early root-growth. Coming farther north, fall planting is safe up to, perhaps, the latitude of Washington, where the chances are about equal between planting in late autumn and in February. In southern California Peas must be brought into bloom as early as February, although the nights are so cool there that they may be planted during any month in the year. The rule observed by the large seed-growers is to plant just ahead of the rainy season. Indeed, they have acres of volunteer Sweet Peas—that is, from seed which were scattered on the ground during the harvest, and forty-five miles south of San Francisco these volunteer plants are in bloom by the first of May, and often early in April.

Speaking for the northern latitudes of this country, I will say that I have never had or heard of any considerable success with planting Sweet Peas where the winters are severe. Certainly this practice has no advantage. Sweet Peas do not take kindly to forcing under glass, although the florists will get an apology for flowers considerably ahead of the regular reason. My attempts at outdoor forcing have not been encouraging. The month of May has enough chill in the air to hold back the growth and enable them to get strong roots.

It ought to be said that our Sweet Peas are not as hardy as those our grandmothers had. In improving the flowers the constitution of the plant has been refined a good deal. And then the seed is nearly all grown under milder conditions than our northern climate affords. California sends us the great bulk of this seed, and the English and French grown seed is, perhaps, less hardy still. These two facts—the higher development of the flower and the growing of the seed in a milder climate—have, in a measure, detracted from the old native hardiness of the plant, and, perhaps, it

accounts for the blight which now kills so many plants, and for the need we now have of more skillful cultivation, and both these conditions bear upon the subject of fall planting. No doubt, a little ingenuity may bring a short row into bloom a week earlier than the regular season, but it does not seem to me worth while for the ordinary amateur to pay for the extra effort. Fall planting will hasten the flowers very little, but a warm southern exposure, a break against the north wind, well-drained soil that will work early, and fertilizing material well mixed through it so as to be ready for immediate use, will help a great deal. I had a respectable exhibit of Sweet Peas at the Springfield Rose Show on the nineteenth of June last year, and my plants were then beginning to bloom abundantly. This was largely due to the preparation of the ground in autumn, and to liberal annual manuring by which easily digested food was ready for the plants as soon as they started. I am usually ready to exhibit Sweet Peas two or three weeks before the Massachusetts Horticultural Society fixes the date for the Sweet Pea Show.

I consider it a great advantage in Sweet Peas to grow slowly during the month of May. They are naturally thrifty plants and very easily take on a fast habit, in which case they run into rank growth of vine without a bloom. Early planting is a safeguard against this, so that the root-growth is made in the cool soil, while the plant grows slowly above ground all through May. Not until the first of June do we want them to make a very perceptible growth above ground, but then they ought to be pushing up at least a foot a week. Not until they make this rapid start should liquid-manure or soapsuds be applied. They are rank feeders and abundant drinkers, and after the tenth of June it is a joy to see them grow straight up six feet and send out a flower-stem at every joint of every branch.

Indian Orchard, Mass. *W. T. Hutchins.*

Notes from West Virginia.

To the Editor of GARDEN AND FOREST:

Sir,—Of a dozen varieties of Japan Quinces that we have planted here the one called Mœrtosii is the most beautiful. Its softly shaded blossoms of a lively carmine remain in bloom for many days after the flowers on the more common red one have faded. But it does not seem as robust as some other kinds, and last year, between the drought of summer and the extreme cold of winter, it had a hard struggle for existence, dying nearly down to the ground. This spring it has made good growth and sent up many shoots, but it will not bloom. The common-flowered red type, on the contrary, is blooming as profusely as usual. It is hard to get too many of these Quinces. Their compact growth, beautiful healthy foliage and profuse flowers make them useful in so many ways, as screens, as hedges, as groups and as individual specimens. A number of other garden varieties besides Mœrtosii have not bloomed this year, but Maule's Quince seems perfectly hardy. Jasminum nudiflorum has bloomed only on the lower branches, and on the ends of its pendulous shoots which sweep the ground, where a wind-heaped mass of Oak-leaves protected the buds.

There is one feature of the present season which makes it sadly different from any other spring in my memory, and this is the scarcity of birds. Usually at this time the grove and garden and the old orchard are jubilant with song from many sparrows, flocks of robins, numbers of blackbirds and blue-birds, redbirds, Carolina wrens and crested titmice. This year we have seen but one pair of robins on the place, and the other birds are proportionately few, except the blackbirds, and these are here in undiminished force. They must be among the hardiest of birds.

The extreme cold weather of the winter, which extended so far southward, must have overtaken the songsters in their winter retreats and slaughtered them by thousands. Even English sparrows, which I had considered proof against cyclones and blizzards, seem to have succumbed to the cold, as very few have ventured to invade our home-grounds this spring. This morning only one song-sparrow sang his matins under my window, and later a single white-throated sparrow has rendered at intervals his sweet monotonous chant, which seems to have more of pathos in it than usual.

Rose Brake, W. Va. *Danske Dandridge.*

Recent Publications.

Les Fleurs de Pleine Terre. Vilmorin-Andrieux & Co. Fourth edition. Paris, 1894.

More than thirty years have passed since the first edition of this work appeared. From that time until the appearance of this much enlarged edition the authors have lost no opportunity to improve and enlarge it, and in the fourth edition will be found a manual of hardy plants indispensable to every one interested in their cultivation who is master of the French language. The value of this work in its present form is much increased by a number of plans of gardens prepared for it by Monsieur Edward André, the distinguished landscape-gardener. In this handsome volume, which covers nearly fourteen hundred pages and is profusely and capitally illustrated, the student will find specific directions for raising annual and biennial plants and their subsequent cultivation, and directions for the cultivation of aquatics and hardy perennials. By far the largest part of the work, however, is devoted to an alphabetical list of the best hardy annuals and perennials, with illustrations of many of the most important species. An excellent and most useful addition to this edition is found in the second part in a calendar showing, first, the time when seeds of different plants should be sown, and when they should be transplanted into the garden, and their time of flowering arranged month by month.

Les Fleurs de Pleine Terre is not a mere compilation, like so many books of its class. In it are recorded the careful experiments and observations of a remarkable family of scientific men who for three generations have labored to elevate horticulture, and more, perhaps, than the members of any other family, have raised it to its present position among the arts.

Part nine of the first volume of the *Contributions of the United States National Herbarium* is devoted to a report made by Mr. J. N. Rose on a collection of plants gathered in the Mexican states of Sonora and Colima, by Dr. Edward Palmer in the years 1890-91. Dr. Palmer's collections in these years contained no less than eighty-two undescribed species, among them a Capparis from the mountains near Manzanillo, a compact shrub eight feet high; a new Cratæra, a tree forty feet high, with a trunk fourteen inches in diameter; an arborescent Morisonia; a new arborescent Forchhammeria, a photograph of which serves as the frontispiece to this report; an arborescent Zylosma, a tree thirty feet high; a new Zizyphus, which Mr. Rose proposes to call Zizyphus Mexicana. The fruits of this tree are gathered by the Mexicans and sold in the markets, being used as a substitute for soap and specially valued for washing woolens. Veatchia discolor, first collected in Lower California and described by Bentham in the *Botany of the Voyage of the Sulphur*, was found by Dr. Palmer at Angeles Bay, where it is called Torate Blanco. The bark is shipped to Europe and is said to have valuable dyeing and tanning properties.

The collection contains two new species of Coccolobis, one of which, curiously enough, was found on the mountain sides near Manzanillo, the species of this genus being usually littoral plants growing very frequently with their roots in brackish water.

A Palm, doubtfully referred to Cocos, found on the shores across the bay from Manzanillo, is described as a tree one hundred feet high, with large and pinnate leaves. The nuts are used in making soap.

These recent collections of Dr. Palmer's only serve to emphasize the richness of the Mexican flora, which seems practically inexhaustible in undescribed species and still offers a most inviting field for the searchers of botanical novelties. Mr. Rose's report, which is illustrated with a number of plates of his new species, is one of the most important of recent contributions to descriptive botany made in the United States.

Notes.

Monsieur Edward André, the distinguished landscape-gardener, editor of the *Revue Horticole* and Chevalier of the Order of the Crown of Italy, has recently been promoted to the grade of officer in that Order in recognition of his services in improving and enlarging the public gardens of Rome.

For covering the walls of a lean-to greenhouse there are few things prettier than the blue and white Plumbagos, P. capensis and P. capensis alba. They look best when trained on wires strung about three or four inches from the wall, and if in fairly rich soil and otherwise encouraged to grow, they will soon make a most brilliant display of bloom.

Daffodils and early-flowering Tulips have just passed their best, and every one who has a garden should now determine to have an abundant supply of them another year. A dozen varieties of Narcissi will give examples of all the leading types, and they are now so cheap that for a few dollars one can have enough to cut an armful any morning and hardly miss them from the general outdoor display.

The Missouri Currant, Ribes aureum, which is found in all old gardens, has a rather straggling habit, but it is among the earliest shrubs to show its flowers, and these are of a singularly clear yellow color. The great value of this plant, however, lies in the delicious fragrance of its flowers. No other shrub at this season has an odor at once so pleasing and so penetrating, and it is well worth planting for this quality alone.

The proceedings of the American Carnation Society at its fourth annual meeeting have been published in a neat pamphlet of eighty pages, which contains not only the papers and discussions, the essential parts of which we published at the time, but it includes the valuable report of the nomenclature committee, which gives the names of all the leading varieties of Carnations, new and old, together with such information as to the quality of each as could be gleaned from the replies to a thousand circulars of inquiry sent out to the leading growers of the country by the committee.

So far the spring auction sales of plants in this city have been very brisk, and an unusual variety of plants have been offered. Indeed, all the ordinary staple herbaceous plants can be had for glass houses or open ground with shrubs and climbers, both tender and hardy, and trees for orchards and for ornamental planting. A comparatively novel feature is the offering of small lots of plants packed in baskets, so that they can be carried away by hand. This enables persons who only want a few plants to buy directly, so that practically a retail trade is carried on at auction.

The taste for the cultivation of Orchids is shown by the works devoted to these plants, which are constantly appearing. The last to reach us is entitled *Les Orchidées Exotiques et leur Culture en Europe*, a book of a thousand pages and nearly one hundred and fifty illustrations, by Lucien Linden, assisted by A. Coaniaux and G. Grignan. Botanical classification, the physiology of Orchids, their natural habitat, their cultivation under glass, importations and hybridization, are some of the subjects treated in this voluminous and comprehensive work. Some idea of the importance of Orchids as garden-plants can be obtained from the chapter devoted to their bibliography, which, without probably aiming to be exhaustive, occupies seven closely printed pages.

The Rhododendrons and other broad-leaved evergreens in the parks of this city and Brooklyn suffered very seriously from the trying winter. More than four hundred Rhododendrons were killed outright in Prospect Park, and in Central Park the destruction was almost as great, but the great mass of these plants in the extreme northern end of the park on a cold rocky slope facing the north came through without any injury whatever. The beauty and healthfulness of this group is a good illustration of the fact that these plants are not so much injured by cold as they are by the sun. Among the coniferous evergreens the Retinisporas were most badly damaged.

Two or three unusually warm days have had the effect of hurrying forward the flowers of the Sugar Maple, and for a few days past these trees have been the most conspicuous and beautiful objects in the landscape near this city. Whether standing alone or in a wood where the other trees show few signs of flowers or foliage, each separate tree looks like a soft cloud of lightest yellow, which is fairly luminous in full sunshine. In years when the weather is comparatively cool at flowering-time these trees do not make such a striking display, because, when the flowers appear more slowly, they are accompanied by the leaves of the tree, and, although they are always beautiful, the effect is heavier, or, at least, it is not so airy as when the flowers appear alone.

More apples were exported in the season just ended than in any previous year, not excepting the banner season of 1891-92, when 1,450,336 barrels left this country for European ports. Nearly two million, or about 1,946,139, barrels of apples were forwarded to Europe from Canada and the United States this season. Prices abroad have been satisfactory to the shippers throughout the entire season, which began earlier than usual, owing to the failure of European apple crops. Golden Russets of good quality recently brought $4.25 to $4.75 at the wholesale auction sales in Liverpool for a barrel holding 140 pounds, and California Newtown Pippins, $3.00 a box of forty pounds, net weight. There are but few apples in the wholesale markets in this city, the entire receipts for last week being quoted as 3,719 barrels. Since September 502,879 barrels have been sold here, against 225,221 barrels during the same term a year ago. The few Baldwins now offered command $3.75 to $4.50 a barrel; Northern Spies, which are even more scarce, $3.00 to $5.00, and Ben Davis $4.50 to $5.00 A few barrels of Newtown Pippins are coming from the Hudson River district, and Golden and Roxbury Russets, the latter costing as much as $4.25 a barrel, make up the bulk of the stock on hand.

The literature of spraying has received another addition in a bulletin prepared by Mr. E. G. Lodeman, of the Cornell Experiment Station, which gives a report of experiments with apples, quinces and plums, but, after all that has been said, very little that is absolutely new can be expected. It seems to be established that the arsenites and the copper compounds will often save crops of fruit from insects and fungi when they are properly applied. The fact is also emphasized in this bulletin that spraying sometimes does little good, which means that orchards suffer from other causes than disease and insect pests. Spraying will not bring a crop of fruit when there is no food for the trees or when it is not in a form that is available. This means that fruit-growers should be as persistent in applying fertilizers and cultivating the soil as they are in the use of remedies against insects and fungi. Some of the results set forth in Mr. Lodeman's bulletin are that power sprayers are unsatisfactory with large trees because they do not throw the liquid far enough or enough of it, and, therefore, hand pumps must be relied upon in orchards, while power sprayers can be used to advantage in vineyards and among low-growing plants. Three gallons of Bordeaux mixture are needed to a tree twenty-five years old. To be effective against the coddling moth Paris green must be applied immediately after the blossoms fall. Leaf-spot and cracking of the quince, the apple-scab, the shot-hole fungus of plums and cherries, and the fruit rot of plums and peaches, can all be held in check by the proper use of the Bordeaux mixture.

The Black Tartarian cherries now coming from California are larger and of a deeper color than those seen here a week ago, but they are not yet perfectly colored nor of full size. They come in box lots, without ice, and bear the journey of three thousand miles and the changes of weather on the road very well. It is expected that cherries will arrive by the carload in refrigerator cars by the end of this week. As many as one hundred car-loads of California oranges, mostly seedlings, will reach eastern markets during this week. California grapefruits of large size are offered at $6.00 a box by wholesale dealers, but find slow sale, since they are light and comparatively juiceless. The smaller and thinner-skinned Jamaica pomelos of really excellent quality bring $7.50 a box. The Jamaica orange season is now ended, though a limited quantity of new fruit known as the spring cutting will come from that island a little later on. The last Havana oranges have arrived, and the stock of this fruit still on hand is bringing $3.50 a barrel. More than 16,000 barrels of pineapples were landed here during last week, and on Monday alone some 14,000 barrels of this fruit were unloaded on the docks. The season for Cuba pineapples is now at its height, and in a fortnight they will come from the Bahamas and Key West. The Florida supply will be hardly a third as large as last year, nearly all the plants in the central part of the state having been frozen. Prices at wholesale range from $4.00 to $16.00 a hundred. A few boxes of wild oranges from Jamaica, known in the trade as Bitter Fruit, are seen in the wholesale stores. These are used solely for marmalade, and sell to canners at $2.00 a box. Catawba grapes, held over winter in cold storage, are still occasionally seen, a box containing two and a half pounds costing thirty-five cents.